CLAIMS

[Claim 1]

A negative-electrode material for lithium secondary battery, comprising a graphite-composite mixture powder (C) that comprises:

a graphite composite powder (A) in which a graphite (D), whose aspect ratio is 1.2 or larger and 4.0 or smaller, is compounded with a graphite (E), which has orientation different from orientation of said graphite (D); and

an artificial graphite powder (B).

[Claim 2]

A negative-electrode material for lithium secondary battery as defined in claim 1, wherein said graphite (D) is a natural graphite.

[Claim 3]

A negative-electrode material for lithium secondary battery as defined in claim 1 or claim 2, wherein said graphite-composite mixture powder (C) has

a tap density of 0.8 g/cm^3 or higher,

a BET specific surface area of 1 m^2/g or larger and 5 m^2/g or smaller, and

an interlayer spacing d_{002} between (002) planes of 0.3360 nm or smaller acoording to X-ray diffraction.

[Claim 4]

A negative-electrode material for lithium secondary battery as defined in any one of claims 1-3,

wherein said graphite composite powder (A) has an aspect ratio of 1.1 or higher and 4.0 or lower.

[Claim 5]

A negative-electrode material for lithium secondary battery as defined in any one of claims 1-4, wherein said graphite composite powder (A) has

a tap density of 0.80 g/cm^3 or higher and 1.35 g/cm^3 or lower,

a BET specific surface area of 0.8 m^2/g or larger and 5.5 m^2/g or smaller, and

a volume-based average particle diameter of 6 μm or larger and 80 μm or smaller.

[Claim 6]

A negative-electrode material for lithium secondary battery as defined in any one of claims 1-5, wherein said artificial graphite powder (B) has

a BET specific surface area of 0.3 m^2/g or larger and 3 m^2/g or smaller, and

a volume-based average particle diameter of 3 μm or larger and 30 μm or smaller.

[Claim 7]

A negative-electrode material for lithium secondary battery as defined in any one of claims 1-6, wherein the ratio of the amount of said graphite (D) to the amount of said graphite composite powder (A) is 30 weight % or higher and 97 weight % or lower.

[Claim 8]

A negative-electrode material for lithium secondary battery as defined in any one of claims 1-7, wherein the ratio of the amount of said graphite composite powder (A) to the amount of said graphite-composite mixture powder (C) is 35 weight % or higher and 98 weight % or lower.

[Claim 9]

A negative-electrode material for lithium secondary battery as defined in any one of claims 1-8, wherein said graphite (E) and said artificial graphite powder (B) are made up of the same material.

[Claim 10]

A negative-electrode material for lithium secondary battery as defined in any one of claims 1-9, wherein said negative-electrode material further comprises a natural graphite powder (G), and the ratio of the amount of said graphite-composite mixture powder (C) to the total amount of said graphite-composite mixture powder (C) and said natural graphite powder (G) is 20 weight % or higher and 90 weight % or lower.

[Claim 11]

A negative-electrode material for lithium secondary battery as defined in any one of claims 1-10, wherein when an electrode with an electrode density of 1.63 ± 0.05 g/cm^3 is formed using said negative-electrode material as an active material, the orientation ratio of the active material is 0.07 or higher.

[Claim 12]

A negative-electrode material for lithium secondary battery as defined in any one of claims 1-11, wherein a lithium secondary battery produced using said negative-electrode material has a discharging capacity of 345 mAh/g or larger.

[Claim 13]

A method of producing a negative-electrode material for lithium secondary battery, comprising:

mixing pulverized matter of a graphite crystal precursor, which is obtained through heat treatment of a pitch material whose quinoline insoluble content is 3 weight % or lower, and graphite (D), whose aspect ratio is 1.2 or higher and 4.0 or lower and whose tap density is 0.7 g/cm^3 or higher and 1.35 g/cm^3 or lower;

carrying out heat treatment A on the mixture obtained from said mixing;

pulverizing the product of said heat treatment A; and

carrying out heat treatment B on the product of said pulverizing.

[Claim 14]

A method of producing a negative-electrode material for lithium secondary battery, comprising:

preparing a graphite composite powder (A) from a pitch material, whose quinoline insoluble content is 3 weight % or lower, and a graphite (D), whose aspect

ratio is 1.2 or higher and 4.0 and whose tap density is 0.7 g/cm^3 or higher and 1.35 g/cm^3 or lower;

preparing an artificial graphite powder (B) from a pitch material; and

mixing the graphite composite powder (A) and the artificial graphite powder (B).

[Claim 15]

A negative electrode for lithium secondary battery, comprising:

a current collector; and

an active material layer formed on said current collector;

wherein said active material layer comprises a negative-electrode material for lithium secondary battery as defined in any one of claims 1-12.

[Claim 16]

A negative electrode for lithium secondary battery, comprising:

a current collector; and

an active material layer formed on said current collector;

wherein said active material layer comprises a negative-electrode material for lithium secondary battery produced by a production method as defined in claim 13 or claim 14.

[Claim 17]

A lithium secondary battery comprising:

a positive electrode and a negative electrode capable of intercalating and deintercalating lithium ions; and

an electrolyte;

wherein said negative electrode is a negative electrode for lithium secondary battery as defined in claim 15 or claim 16.